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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,109	07/08/2003	Brian James Knight	56162.000431	7691

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EXAMINER	
CHAN, SAI MING	
ART UNIT	**PAPER NUMBER**
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/614,109	KNIGHT ET AL.	
	Examiner	Art Unit	
	Sai-Ming Chan	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/8/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/9/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to because some of them are not legible. Please refer to the "Notice of Draftsperson Patent Drawing Review" for details.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Quigley et al. (U.S. Patent Publication # 2006/0088056)** in view of **Radko (U.S.Patent # 5687392)**, and further in view of **Cowger et al (U.S. Patent # 6314477)**.

Consider **claim 1**, Quigley et al. clearly disclose and show a method for transferring network packet data stored in memory to an output device (paragraph 231, lines 14-17), the method comprising the steps of:

concatenating one or more packet data octets (fig. 15) from at least a first data word having at least one packet data octet (paragraph 279, lines 1-4) to be included in a network packet to generate a first sequence of packet data octets (Fig. 15) having an octet length at least as great as an octet length of a data word;

storing the first sequence of packet data octets in a FIFO buffer (fig. 8a (533)) operably connected to the output device (fig. 7b (314)) when the octet length of the sequence of packet data octets is equal to the octet length of a data word (fig. 15 (1103)); and

storing a first subset of packet data octets from the first sequence of packet data octets in the FIFO buffer (paragraph 236, lines 7-9, fig.8a (533)) and storing a remaining second subset of packet data octets from the first sequence in an alignment register when the octet length of the first sequence of packet data octets exceeds the octet length of a data word wherein an octet length of the first subset of packet data octets is equal to the octet length of a data word.

However, Quigley et al. do not specifically disclose how to handle data octets which exceeds the octet length of a data word.

In the same field of endeavor, Radko clearly discloses and shows an alignment register (fig. 3, dynamically allocated DMA transfer Buffer (387)) and the storing of packet sequence which is longer than the data word (column 7, lines 58-61).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to transfer packet data stored in memory to output device, as taught by Quigley, et al.; and handle the data octet which is longer than a data word, as taught by Radko; thereby enable the storing of data packets of variable lengths in the FIFO registers.

However, Quigley et al, as modified by Radko, fails to disclose how the data is organized into sequences and how the frames of variable length are stored in the memory buffer.

In the same field of endeavor, Cowger et al. clearly shows and discloses how the data packets are sequenced (fig. 2) and how the data of variable length are stored in memory buffer (fig.21 (2122-2124, 2188);column 21, lines 8-11).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention was made to sequence the data packets and store the variable length subsets in the memory buffer, as taught by Cowger et al. in the method of Quigley et al. as modified by Redko for the purpose of joining data to form a sequence of data or if the data is longer than a data word, store a first subset of the first sequence of data in the alignment block.

Consider **claim 2,** and **as applied to claim 1 above,** Quigley et al., as modified by Radko and further modified by Cowger et al. fails to show the alignment register and the storing of the data in the alignment register.

In the same field of endeavor, Radko clearly show and disclose the step of

storing the first sequence of packet data octets in the alignment register (Radko: inherently taught in fig. 3, dynamically allocated DMA transfer Buffer (387)) when the octet length of the first sequence of packet data octets is less than the octet length of a data word (Radko: inherently taught in column 7, lines 58-61).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention was made to store the data in a temporary place if the data sequence is les than a data word.

Consider **claim 3,** and **as applied to claim 1 above**, Quigleyet al., as modified by Radko and further modified by Cowger et al. clearly disclose and show the steps of:

concatenating at least one packet data octet from a second data word (Quigley: inherently taught in paragraph 279, lines 1-4) accessed from memory with the second subset of packet data octets stored in the alignment register to generate a second sequence of packet data octets having a octet length at least as great as the octet length of a data word;

storing the second sequence of packet data octets in the FIFO buffer (Quigley: inherertly taught in paragraph 236, lines 7-9, fig.8a (533)) when the octet length of the sequence of packet data octets is equal to the octet length of a data word ; and

storing a first subset of packet data octets from the second sequence of packet data octets in the FIFO buffer (inherertly taught paragraph 236, lines 7-9, fig.8a (537)) and storing a remaining second subset of packet data octets from the second sequence in the alignment register when the octet length of the second sequence of

packet data octets exceeds the octet length of a data word, wherein an octet length of the first subset of packet data octets of the second sequence is equal to the octet length of a data word.

However, Quigley et al. do not specifically disclose how to handle data octets which exceeds the octet length of a data word.

In the same field of endeavor, Radko clearly discloses and shows an alignment register (fig. 3, dynamically allocated DMA transfer Buffer (387)) and the storing of packet sequence which is longer than the data word (column 7, lines 58-61).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to transfer packet data stored in memory to output device, as taught by Quigley, et al.; and handle the data octet which is longer than a data word, as taught by Radko; thereby enable the storing of data packets of variable lengths in the FIFO registers.

However, Quigley et al, as modified by Radko, fails to disclose how the data is organized into sequences and how the frames of variable length are stored in the memory buffer.

In the same field of endeavor, Cowger et al. clearly shows and discloses how the data packets are sequenced (fig. 2) and how the data of variable length are stored in memory buffer (fig.21 (2122-2124, 2188);column 21, lines 8-11).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention was made to sequence the data packets and store the variable length subsets in the memory buffer, as taught by Cowger et al. in the method of

Quigley et al. as modified by Redko for the purpose of joining data to form a sequence of data or if the data is longer than a data word, store a first subset of the second sequence of data in the alignment block.

Consider **claim 4**, and **as applied to claim 1 above**, Quigley et al., as modified by Radko and further modified by Cowger et al. clearly disclose and show the claimed method except the step of the octet length of a data word is an integer multiple of four.

In the same field of endeavor, Cowger et al. clearly shows and discloses that the data word's octet length could be an integer multiple of four (inherently taught in column 20, lines 60-64 (Cowger)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention was made to create the octet length of a data word in an integer multiple of four.

Consider **claim 5**, Quigley et al. clearly disclose and show a system for transferring network packet data stored in memory to an output device (Quigley: paragraph 231, lines 14-17), the system comprising:

a direct memory access (DMA) interface (Quigley:fig.8a Local Bus Interface(328)) for accessing a set of data words stored in memory (Quigley: fig. 8a (327)), each data word having at least one valid octet to be included in a network packet and each data word being accessed using a DMA address (Quigley:paragraph 236, lines 5-7) associated with the data word;

a first in-first out (FIFO) buffer (Quigley: fig.8a, D/S FIFO (535)) for storing network packet data to be transmitted by the output device (Quigley:fig. 7b, SDRAM(314)) and an alignment block (Radko: column 5, lines 31-34) having at least one alignment register (Radko: fig.3, dynamically allocated DMA transfer buffer (387)), wherein the alignment register for storing at least one data octet, and wherein the alignment block is adapted to:

concatenate one or more packet data octets (Quigley: inherently taught in paragraph 279, lines 1-4) from at least a first data word having at least one packet data octet to be included in a network packet to generate a first sequence of packet data octets having an octet length at least as great as an octet length of a data word;

store the first sequence of packet data octets in a FIFO buffer (Quigley: fig. 8b (389)) operably connected to the output device when the octet length of the sequence of packet data octets is equal to the octet length of a data word; and

store a first subset of packet data octets from the first sequence of packet data octets in the FIFO buffer and storing a remaining second subset of packet data octets from the first sequence in an alignment register when the octet length of the first sequence of packet data octets exceeds the octet length of a data word, wherein an octet length of the first subset of packet data octets is equal to the octet length of a data word.

However, Quigley et al. do not specifically disclose how to handle data octets which exceeds the octet length of a data word.

In the same field of endeavor, Radko clearly discloses and shows an alignment

register (fig. 3, dynamically allocated DMA transfer Buffer (387)) and the storing of packet sequence which is longer than the data word (column 7, lines 58-61).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to transfer packet data stored in memory to output device, as taught by Quigley, et al.; and handle the data octet which is longer than a data word, as taught by Radko; thereby enable the storing of data packets of variable lengths in the FIFO registers.

However, Quigley et al., as modified by Radko, fails to disclose that the the data is organized into sequences in memory.

In the same field of endeavor, Cowger et al. clearly shows and discloses how the data packets are sequenced (fig. 2) and how the data of variable length are stored in memory buffer (fig.21 (2122-2124, 2188);column 21, lines 8-11).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention was made to sequence the data packets and store the variable length subsets in the memory buffer, as taught by Cowger et al. in the method of Quigley et al. as modified by Redko for the purpose of joining data to form a sequence of data.

Consider **claim 6**, and **as applied to claim 5 above**, Quigley et al. as modified by Radko and further by Cowger et al. clearly show and disclose tne claimed method except the step that handles packet data that is less than a data word.

In the same field of endeavor, Radko clearly discloses and shows the alignment block (Radko: column 5, lines 31-34) is further adapted to store the first sequence of

packet data octets in the alignment register (Radko: inherently taught in fig. 3, dynamically allocated DMA transfer Buffer (387)) when the octet length of the first sequence of packet data octets is less than the octet length of a data word ((Radko: inherently taught in column 7, lines 58-61)).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to create an alignment block to handle packet data that is less than a data word.

Consider **claim 7,** and **as applied to claim 5 above**, Quigley et al. as modified by Radko and further modified by Cowger et al. clearly shows and disclose the claimed method except the alignment block and how it is used to handle the packet data that exceeds the data length.

In the same field of endeavor, Radko clearly discloses and shows the alignment block (Radko: column 5, lines 31-34) is further adapted to:

concatenate at least one packet data octet from a second data word accessed from memory with the second subset of packet data octets stored in the alignment register to generate a second sequence of packet data octets (Radko: abstract, lines 18-22) having a octet length at least as great as the octet length of a data word;

store the second sequence of packet data octets in the FIFO buffer when the octet length of the sequence of packet data octets is equal to the octet length of a data word; and

store a first subset of packet data octets from the second sequence of packet data octets in the FIFO buffer and storing a remaining second subset of packet data octets from the second sequence in the alignment register (Radko: abstract, lines 18-22) when the octet length of the second sequence of packet data octets exceeds the octet length of a data word, wherein an octet length of the first subset of packet data octets of the second sequence is equal to the octet length of a data word.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to create an alignment block to handle packet data that exceeds a data word.

Consider **claim 8**, and **as applied to claim 5 above**, Quigley et al. as modified by Radko and further modified by Cowger et al. clearly disclose and show the claimed method except that the octet length of a data word is an integer multiple of four.

In the same field of endeavor, Cowger et al. clearly shows and discloses that the data word's octet length could be an integer multiple of four (Cowger: inherently taught in column 20, lines 60-64).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention was made to create the octet length of a data word in an integer multiple of four.

Consider **claim 9**, and **as applied to claim 5 above**, Quigley et al. as modified by Radko and further modified by Cowger et al., clearly show and disclose the method except the step that shows the alignment block and the storing of packet data in the register.

In the same field of endeavor, Radko et al. clearly shows and discloses that clearly that the alignment block (Radko: column 5, lines 31-34) further includes at least one FIFO register and is further adapted to store at least a third sequence (Radko: abstract, lines 18-22) of one or more packet data octets from a processor in the FIFO register.

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention was made to create an alignment block for the storing of packet data.

Consider **claim 10**, and **as applied to claim 9 above**, Quigley et al. as modified by Radko and further modified by Cowger et al. clearly disclose and show the claimed method except that the alignment block and its use for storing packet data.

In the same field of endeavor, Radko clearly show and disclose that the alignment block is further adapted to store the third sequence of packet data octets in the FIFO buffer (Radko: abstract, lines 18-22 ; paragraph 236, lines 7-9, fig.8a (533)) when an octet length of the third sequence is equal to the octet length of a data word.

Therefore, it would have been obvious to a person of ordinary skill in the art at

the time the invention was made to create an alignment block for the handling of packet data.

Consider **claim 11**, and **as applied to claim 9 above**, Quigley et al. as modified by Radko and further modified by Cowger et al. clearly show and disclose the claimed method except the alignment block.

In the same field of endeavor, Radko clearly show and disclose that the alignment blockblock is further adapted to concatenate (Quigley:inherently taught in paragraph 279, lines 1-4)at least a subset of the third sequence of packet data octets with a sequence of packet data octets stored in the alignment register to generate a fourth sequence of packet data octets (Radko: abstract, lines 18-22) and store the fourth sequence of packet data octets in the FIFO (Quigley: paragraph 236, lines 7-9, fig. 8a (533))when an octet length of the fourth sequence is equal to the octet length of a data word.

Consider **claim 12**, and **as applied to claim 9 above**, Quigley et al. as modified by Radko and further modified by Cowger et al. clearly disclose and show that the alignment block is further adapted to concatenate (Quigley: paragraph 279, lines 1-4) at least a subset of the third sequence of packet data octets with a sequence of packet data octets stored in the alignment register to generate a fourth sequence of packet data octets and store a first subset the fourth sequence of packet data octets in the FIFO buffer (Quigley: paragraph 236, lines 7-9, fig.8a (533)) and a remaining second

subset of the fourth sequence of packet at octets in the alignment register when an octet length of the fourth sequence exceeds the octet length of a data word.

Consider **claim 13**, and **as applied to claim 9 above**, Quigley et al. as modified by Radko and further modified by Cowger et al. clearly disclose and show that the alignment block is further adapted to concatenate (Quigley: inherently taught in paragraph 279, lines 1-4) at least a subset of the third sequence of packet data octets with a sequence of packet data octets stored in the alignment register to generate a fourth sequence of packet data octets and store the fourth sequence of packet data octets in the alignment register when an octet length of the fourth sequence is less than the octet length of a data word.

However Quigley et al. as modified by Radko and further modified by Cowger et al. fails to disclose the alignment block and how it is used to store packet data that is less than a data word.

In the same field of endeavor, Radko clearly show and disclose the step of storing the first sequence of packet data octets in the alignment register (Radko: inherently taught in fig. 3, dynamically allocated DMA transfer Buffer (387)) when the octet length of the first sequence of packet data octets is less than the octet length of a data word (Radko: inherently taught in column 7, lines 58-61).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention was made to create an alignment block to store data sequence that is less than a data word.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent # : 5933654 A1, inventer: Galdun et al., issued: 8/3/1999.

U.S.Patent # : 6092124, Inventer: Priem et al., issued:7/18/2000.

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sai-Ming Chan whose telephone number is 571-270-1769. The examiner can normally be reached on monday - Friday 8:00-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael perez-gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RAFAEL PEREZ-GUTIERREZ
SUPERVISORY PATENT EXAMINER
1/19/07